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09/721,578	11/21/2000	Terje A. Skotheim	MT-0026.2	2463

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Squire Sanders & Dempsey LLP  
Two Renaissance Square  
40 North Central Avenue Suite 2700  
Phoenix, AZ 85004-4498

EXAMINER

CANTELMO, GREGG

ART UNIT PAPER NUMBER

1745

DATE MAILED: 01/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/721,578

Applicant(s)

SKOTHEIM ET AL.

Examiner

Gregg Cantelmo

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2003 and 24 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 and 12 is/are allowed.
- 6) ☒ Claim(s) 14 and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 24, 2003 has been entered.

### ***Response to Amendment***

2. In response to the amendment received October 20, 2003 and entered as per the RCE filed November 24, 2003:
  - a. Claim 11 has been cancelled. Claims 1-10 and 12-15 are pending.
  - b. The 112 rejections, the 102 rejection and the 103 rejections and the obviousness-type double patenting rejections are withdrawn.

### ***Specification***

3. The disclosure is objected to because of the following informalities: the status of USAPP Ser. No. 09/399,967 (numerous citations in the written disclosure) should be updated to the corresponding U.S. patent number. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami.

Kawakami discloses an anode of an electrochemical cell, wherein said anode comprises: a first anode active layer comprising lithium metal (col. 2, ll. 58-60) and a multi-layer structure in contact with a surface of the first anode active layer, wherein said multi-layer structure comprises 3 or more layers (col. 3, ll. 19-23), wherein at least one of said three or more layers comprises a single ion conducting layer and at least one of said three or more layers comprises a polymer layer (col. 28, ll. 5-11). The stacked structure recited in col. 28, ll. 1-11 includes a conductor layer, semiconductor layer and insulating layer stacked by a vapor deposition method. Thus this constitutes a 3-layered structure. Each of these layers conducts lithium ions and is single ion conductors. The insulating layer is a polymer material (col. 27, ll. 5-10 as applied to claim 14).

The structure can be four layers (col. 3, ll. 19-23 as applied to claim 15).

Art Unit: 1745

The difference between claim 14 and Kawakami is that Kawakami does not teach of layers apart from the insulative (non-electronically conductive) layer as being a polymer material.

Kawakami discloses of a three or four layer structure disposed intermediate to the negative electrode and electrolyte. Therein the structure comprises an insulative layer, semiconductive layer and conductive layer, each of which must be ionically conductive in order for the cell to effectively function.

It is held to be within the skill of an ordinary worker in the art to use materials apart from those disclosed in Kawakami so long as each layer provides the requisite insulative, semiconductive and conductive properties.

Thus providing a semiconductive or conductive polymer layer in the multilayer structure in place of the materials disclosed by Kawakami would have been obvious material design choices and provide the requisite electronic conductance needed in the teachings of Kawakami.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Kawakami by selecting either the semiconductive or conductive layers to be a polymer layer since it would have been obvious material design choices and provide the requisite electronic conductance needed in the teachings of Kawakami. The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 14 and 15 have been considered but are moot in view of the new ground(s) of rejection.

### ***Double Patenting***

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claim 14 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 12 of U.S. Patent No. 6,183,901 (Ying). Although the conflicting claims are not identical, they are not patentably distinct from each other.

Ying claims an anode comprising a lithium metal anode active material and a multilayer structure in contact with a surface layer of the anode active

Art Unit: 1745

material, said multilayer structure comprising a polymer layer interposed between the glass layers (claim 12 as applied to claim 14).

While the scope of claim 12 of Ying and instant claim 14 are not identical, claim 12 encompasses at least the elements of instant claim 14 and thus is held to be obvious variants.

***Allowable Subject Matter***

9. Claims 1-10 and 12-13 are allowed.

10. The following is an examiner's statement of reasons for allowance: none of the prior art of record appear to teach, suggest or render obvious the invention of claim 1 wherein the anode comprises: (i) a first anode active layer comprising lithium metal; and (ii) a multi-layer structure in contact with a surface layer of said first anode active layer, wherein said multi-layer structure comprises three or more layers, wherein at least one of said three or more layers comprises a ' non-electronically conductive single ion conducting layer and at least another one of said three or more layers comprises a polymer layer, wherein said first anode active layer further comprises an intermediate layer selected from the group consisting of temporary protective metal layers and plasma CO<sub>2</sub> treatment layers and wherein said intermediate layer is interposed between said first anode active layer and said multi-layered structure.

Kawakami does not teach or suggest of the intermediate layer disposed between the first anode active layer and the multi-layered structure as recited in claim 1.

Art Unit: 1745

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is (703) 305-0635. The examiner can normally be reached on Monday through Thursday from 8:00 a.m. to 5:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan, can be reached on (703) 308-2383. Note that these telephone numbers will change around January 1, 2004. At such time the examiners new telephone number will be (571) 272-1283 and the examiner's supervisor's number will be (571) 272-1292. FAX communications should be sent to FAX number: (703) 872-9306. FAXES received after 4 p.m. will not be processed until the following business day. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Gregg Cantelmo  
Patent Examiner  
Art Unit 1745

gc



December 21, 2003